ABSTRACT : An Application of Ergodic Theory to the orecast of Satellite to Ground Station View Periods

Planners for the Deep Space Network at JPL require long-term forecasts of ground station view periods. The standard approach requires orbit integration up to 20 years. 1 he geometry of the satellite groundtrack and station mask suggests the use of ergodic theory. An invariant measure was found which enabled the application of the Ergodic 1 heorem to this problem. The total view period for a circular orbit is given by a definite intergral over the sphere.